Reporting Federal Activities and Matters of National Concern . . .

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March 1963

The President's Message on Education

The Administration's Proposals for Higher Education

ANTHONY J. CELEBREZZE

The National Education Improvement Act of 1963

FRANCIS KEPPEL

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE—Office of Education

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The President's Message on Education

In his Message on Education delivered to the Congress, January 29, 1963, the President called for a comprehensive program to strengthen and improve educational quality and educational opportunities in the Nation. The full text of the Message is presented here.

EDUCATION is the keystone in the arch of freedom and progress. Nothing has contributed more to the enlargement of this Nation's strength and opportunities than our traditional system of free, universal elementary and secondary education, coupled with widespread availability of college education.

For the individual, the doors to the schoolhouse, to the library, and to the college lead to the richest treasures of our open society: to the power of knowledge—to the training and skills necessary for productive employment—to the wisdom, the ideals, and the culture which enrich life—and to the creative, self-disciplined understanding of society needed for good citizenship in today's changing and challenging world.

For the Nation, increasing the quality and availability of education is vital to both our national security and our domestic well-being. A free nation can rise no higher than the standard of excellence set in its schools and colleges. Ignorance and illiteracy, unskilled workers and school dropouts—these and other failures of our educational system breed failures in our social and economic system: delinquency, unemployment, chronic dependence, a waste of human resources, a loss of productive power and purchasing power, and an increase in tax-supported benefits. The loss of only 1 year's income due to unemployment is more than the total cost of 12 years of education through high school. Failure to improve educational performance is thus not only poor social policy, it is poor economics.

At the turn of the century, only 10 percent of our adults had a high school or college education. Today such an education has become a requirement for an increasing number of jobs. Yet nearly 40 percent of our youths are dropping out before graduating from high school; only 43 percent of our adults have completed high school; only 8 percent of our adults have completed college; and only 16 percent of our young people are presently completing college. As my Science Advisory Committee has reported, one of our most serious manpower shortages is the lack of Ph. D.'s in engineering, science, and mathematics; only about one-half of 1 percent of our school-age generation is achieving Ph. D. degrees in all fields.

This Nation is committed to greater investment in economic growth; and recent research has shown that one of the most beneficial of all such investments is education, accounting for some 40 percent of the Nation's growth and productivity in recent years. It is an investment which yields a substantial return in the higher wages and purchasing power of trained workers, in the new products and techniques which come from skilled minds and in the constant expansion of this Nation's storehouse of useful knowledge.

In the new age of science and space, improved education is essential to give new meaning to our national purpose and power. In the last 20 years, mankind has acquired more scientific information than in all of previous history. Ninety percent of all the scientists that ever lived are alive and working today. Vast stretches of the unknown are being explored every day for military, medical, commercial, and other reasons. And finally, the twisting course of the cold war requires a citizenry that understands our principles and problems. It requires skilled manpower and brainpower to match the power of totalitarian discipline. It requires a scientific effort which demonstrates the superiority of freedom. And it requires an electorate in every

State with sufficiently broad horizons and sufficient maturity of judgment to guide this Nation safely through whatever lies ahead.

In short, from every point of view, education is of paramount concern to the national interest as well as to each individual. Today we need a new standard of excellence in education, matched by the fullest possible access to educational opportunities, enabling each citizen to develop his talents to the maximum possible extent.

Our concern as a nation for the future of our children—and the growing demands of modern education which Federal financing is better able to assist—make it necessary to expand Federal aid to education beyond the existing limited number of special programs. We can no longer afford the luxury of endless debate over all the complicated and sensitive questions raised by each new proposal on Federal participation in education. To be sure, these are all hard problems—but this Nation has not come to its present position of leadership by avoiding hard problems. We are at a point in history when we must face and resolve these problems.

State and local government and private institutions, responsive to individual and local circumstances, have admirably served larger national purposes as well. They have written a remarkable record of freedom of thought and independence of judgment; and they have, in recent years, devoted sharply increased resources to education. Total national outlays for education nearly trebled during the 1940's and more than doubled during the 1950's, reaching a level of nearly $25 billion in 1960. As a proportion of national income, this represented a rise from little more than 4 percent in 1940 to nearly 6 percent in 1960, an increase of over 40 percent in total effort.

But all this has not been enough. And the Federal Government—despite increasing recognition of education as a nationwide challenge, and despite, the increased financial difficulties encountered by States, communities, and private institutions in carrying this burden—has clearly not met its responsibilities in education. It has not offered sufficient help to our present educational system to meet its inadequacies and overcome its obstacles.

I do not say that the Federal Government should take over responsibility for education. That is neither desirable nor feasible. Instead, its participation should be selective, stimulative, and, where possible, transitional.

A century of experience with land-grant colleges has demonstrated that Federal financial participation can assist educational progress and growth without Federal control. In the last decade, experience with the National Science Foundation, with the National Defense Education Act, and with programs for assisting federally affected school districts has demonstrated that Federal support can benefit education without leading to Federal control. The proper Federal role is to identify national education goals and to help local, State, and private authorities build the necessary roads to reach those goals. Federal aid will enable our schools, colleges, and universities to be more stable financially and therefore more independent.

These goals include the following:

First, we must improve the quality of instruction provided in all of our schools and colleges. We must stimulate interest in learning in order to reduce the alarming number of students who now drop out of school or who do not continue into higher levels of education. This requires more and better teachers—teachers who can be attracted to and retained in schools and colleges only if pay levels reflect more adequately the value of the services they render. It also requires that our teachers and instructors be equipped with the best possible teaching materials and curriculums. They must have at their command methods of instruction proven by thorough scientific research into the learning process and by careful experimentation.

Second, our educational system faces a major problem of quantity—of coping with the needs of our expanding population and of the rising educational expectations for our children which all of us share as parents. Nearly 50 million people were enrolled in our schools and colleges in 1962—an increase of more than 50 percent since 1950. By 1970, college enrollment will nearly double, and secondary schools will increase enrollment by 50 percent—categories in which the cost of education, including facilities, is several times higher than in elementary schools.

Third, we must give special attention to increasing the opportunities and incentives for all Americans to develop their talents to the utmost—to complete their education and to continue their self-development throughout life. This means preventing

school dropouts, improving and expanding special educational services, and providing better education in slum, distressed, and rural areas where the educational attainment of students is far below par. It means increased opportunities for those students both willing and intellectually able to advance their education at the college and graduate levels. It means increased attention to vocational and technical education, which have long been underdeveloped in both effectiveness and scope, to the detriment of our workers and our technological progress.

In support of these three basic goals, I am proposing today a comprehensive, balanced program to enlarge the Federal Government's investment in the education of its citizens—a program aimed at increasing the educational opportunities of potentially every American citizen, regardless of age, race, religion, income, and educational achievement.

This program has been shaped to meet our goals on the basis of three fundamental guidelines:

A. An appraisal of the entire range of educational problems, viewing educational opportunity as a continuous lifelong process, starting with preschool training and extending through elementary and secondary schools, college, graduate education, vocational education, job training and retraining, adult education, and such general community educational resources as the public library;

B. A selective application of Federal aid—aimed at strenthening, not weakening, the independence of existing school systems and aimed at meeting our most urgent education problems and objectives, including quality improvement; teacher training; special problems of slum, depressed, and rural areas; needy students; manpower shortage areas, such as science and engineering; and shortages of educational facilities; and

C. More effective implementation of existing laws, as reflected in my recent budget recommendations.

To enable the full range of educational needs to be considered as whole, I am transmitting to the Congress with this message a single, comprehensive education bill—the National Education Improvement Act of 1963. For education cannot easily or wisely be divided into separate parts. Each part is linked to the other. The colleges depend on the work of the schools; the schools depend on the colleges for teachers; vocational and technical education is not separate from general education. This bill recalls the posture of Jefferson:

"Nobody can doubt my zeal for the general instruction of the people. I never have proposed a sacrifice of the primary to the ultimate grade of instruction. Let us keep our eye steadily on the whole system."

In order that its full relation to economic growth, to the national security, and to human and institutional freedom may be analyzed in proper perspective, this bill should be considered as a whole, as a combination of elements designed to solve problems that have no single solution.

This is not a partisan measure—and it neither includes nor rejects all of the features which have long been sought by the various educational groups and organizations. It is instead an attempt to launch a prudent and balanced program drawing upon the efforts of many past Congresses and the proposals of many Members of both Houses and both political parties. It is solely an educational program, without trying to solve all other difficult domestic problems. It is clearly realistic in terms of its cost—and it is clearly essential to the growth and security of this country.

The Expansion of Opportunities for Individuals in Higher Education

Our present American educational system was founded on the principle that opportunity for education in this country should be available to all—not merely to those who have the ability to pay. In the past, this has meant free public elementary and secondary schools in every community—thereafter, land-grant, State, and municipal colleges, and vocational education—and more recently, job retraining and specialized teachers for students with special educational problems.

Now a veritable tidal wave of students is advancing inexorably on our institutions of higher education, where the annual costs per student are several times as high as the cost of a high school education, and where these costs must be borne in large part by the student or his parents. Five years ago the graduating class of the secondary schools was 1.5 million; 5 years from now it will be 2.5 million. The future of these young people and the Nation rests in large part on their access to college and graduate education. For this country reserves its highest honors for only one kind of aristocracy—that which

the Founding Fathers called "an aristocracy of achievement arising out of a democracy of opportunity."

Well over half of all parents with school-age children expect them to attend college. But only one-third do so. Some 40 percent of those who enter college do not graduate, and only a small number continue into graduate and professional study. The lack of adequate aid to students plays a large part in this disturbing record.

Federal aid to college students is not new. More than 3 million World War II and Korean conflict veterans have received $6 billion in Federal funds since 1944 to assist them to attend college.

Additionally, the National Defense Education Act college student loan program has aided more than 300,000 students in more than 1,500 institutions who have borrowed nearly $220 million. In 4 years of operations, defaults have totaled only $700 while repayment rates are more than twice that required by law.

But as effective as this program has been, it has not fulfilled its original objective of assuring that "no student of ability will be denied an opportunity for higher education because of financial need." The institutional ceiling of $250,000 per year on the Federal contribution limits loan funds in at least 98 of the presently participating institutions. The annual statutory ceiling of $90 million on Federal appropriations restricts the size of the program. As a result, only about 5 percent of the students enrolled in participating colleges are assisted. Additionally, the forgiveness feature for teachers is rendered less attractive as well as less meaningful by excluding those who go on to teach in colleges, private schools, or on oversea military posts. This proven program must be enlarged and strengthened.

Other types of assistance are needed. For students who cannot meet the financial criteria under the NDEA loan program, a loan insurance program—drawing on techniques well established by the FHA and other Federal programs—would encourage banks and other institutions to loan more money for educational purposes.

Moreover, many students from families with limited incomes cannot and should not carry a heavy burden of debt. They must rely largely on income from employment while in college. For these students, the Federal Government should—as it did in the days of the National Youth Administration—help colleges provide additional student work opportunities of an educational character.

A serious barrier to increased graduate study is the lack of adequate financial aid for graduate students. Only 1,500 fellowships are permitted annually under the National Defense Education Act program, upon which we are dependent for urgently needed increases in the number of college teachers and the number of graduate students pursuing other courses essential to the Nation's advancement and security. The National Science Foundation has broad authority for fellowships and training grants, but its program, too, has been restricted by limited appropriations. The President's Science Advisory Committee has predicted that the dramatically increasing demand for engineers, mathematicians, and physical scientists, will require that the output of Ph. D.'s in these fields alone be increased 2½ times, to a total of 7,500 annually by 1970, and that the number of masters degrees awarded annually be substantially increased. In all fields the need exceeds the supply of doctoral recipients. The shortage is particularly acute in college teaching, where at present rates the Nation will lack 90,000 doctoral degree holders by 1970. It is clearly contrary to the national interest to have the number of graduate students limited by the financial ability of those able and interested in pursuing advanced degrees. Fellowship programs can ease much of the financial burden and, most importantly, encourage and stimulate a fuller realization and utilization of our human resources.

The welfare and security of the Nation require that we increase our investment in financial assistance for college students both at undergraduate and graduate levels. In keeping with present needs and our traditions of maximum self-help, I recommend that the Congress enact legislation to—

1. Extend the National Defense Education Act student loan program, liberalize the repayment forgiveness for teachers, raise the ceiling on total appropriations, and eliminate the limitation on amounts available to individual institutions.

2. Authorize a supplementary new program of Federal insurance for commercial loans made by banks and other institutions to college students for educational purposes.

3. Establish a new work-study program for needy college students unable to carry too heavy a loan burden, providing up to half the pay for students

employed by the colleges in work of an educational character—as, for example, laboratory, library, or research assistants.

4. Increase the number of National Defense Education Act fellowships to be awarded by the Office of Education from 1,500 to 12,000, including summer session awards.

5. Authorize a thorough survey and evaluation of the need for scholarships or additional financial assistance to undergraduate students so that any further action needed in this area can be considered by the next Congress.

6. In addition, as part of this program to increase financial assistance to students, the 1964 budget recommendations for the National Science Foundation, which are already before the Congress, include a proposed increase of $35 million to expand the number of fellowships and new teaching grants for graduate study from 2,800 in 1963 to 8,700 in fiscal 1964.

Expansion and Improvement of Higher Education

Aid to college students will be to no avail if there are insufficient college classrooms. The long-predicted crisis in higher education facilities is now at hand. For the next 15 years, even without additional student aid, enrollment increases in colleges will average 340,000 each year. If we are to accommodate the projected enrollment of more than 7 million college students by 1970—a doubling during the decade—$23 billion of new facilities will be needed, more than three times the quantity built during the preceding decade. This means that, unless we are to deny higher education opportunities, to our youth, American colleges and universities must expand their academic facilities at a rate much faster than their present resources will permit.

In many colleges, students with adequate modern dormitories and living quarters—thanks to the College Housing Act—are crammed in outmoded, overcrowded classrooms, laboratories, and libraries. Even now it is too late to provide these facilities to meet the sharp increases in college enrollment expected during the next 2 years. Further delay will aggravate an already critical situation.

I recommend, therefore, the prompt enactment of a program to provide loans to public and nonprofit private institutions of higher education for construction of urgently needed academic facilities.

The opportunity for a college education is severely limited for hundreds of thousands of young people because there is no college in their own community. Studies indicate that the likelihood of going to college on the part of a high school graduate who lives within 20 to 25 miles of a college is 50 percent greater than it is for the student who lives beyond commuting distance. This absence of college facilities in many communities causes an unfortunate waste of some of our most promising youthful talent. A demonstrated method of meeting this particular problem effectively is the creation of 2-year community colleges—a program that should be undertaken without delay and which will require Federal assistance for the construction of adequate facilities.

I recommend, therefore, a program of grants to States for construction of public community junior colleges.

There is an especially urgent need for college level training of technicians to assist scientists, engineers, and doctors. Although ideally one scientist or engineer should have the backing of two or three technicians, our institutions today are not producing even one technician for each three science and engineering graduates. This shortage results in an inefficient use of professional manpower—the occupation of critically needed time and talent to perform tasks which could be performed by others—an extravagance which cannot be tolerated when the Nation's demand for scientists, engineers, and doctors continues to grow. Failure to give attention to this matter will impede the objectives of the graduate and postgraduate training programs mentioned below.

I recommend, therefore, a program of grants to aid public and private nonprofit institutions in the training of scientific, engineering, and medical technicians in 2-year college-level programs, covering up to 50 percent of the cost of constructing and equipping as well as operating the necessary academic facilities.

Special urgency exists for expanding the capacity for the graduate training of engineers, scientists, and mathematicians. The President's Science Advisory Committee has recently reported that an unprecedented acceleration in the production of advanced degrees is immediately necessary to increase our national capability in these fields. Added facilities, larger faculties, and new institutions are needed. I have recommended, therefore, in the proposed 1964 budget already before the Congress, a strengthening of the National Science Foundation matching grant

program for institutions of higher education to expand and improve graduate and undergraduate science facilities.

Because today's trend in colleges and universities is toward less lecturing and more independent study, the college and university library becomes even more essential in the life of our students. Today, as reported by the American Library Association, nearly all college libraries are urgently in need of additional books, periodicals, scientific reports, and similar materials to accommodate the growing number of students and faculty. Additionally, they need buildings, equipment, and publications to serve their academic communities, whether public or private.

I recommend the authorization of Federal grants to institutions of higher education for library materials and construction, on a broad geographic basis, with priority to those most urgently requiring expansion and improvement.

Expansion of high quality graduate education and research in all fields is essential to national security and economic growth. Means of increasing our supply of highly trained professional personnel to match the rapidly growing demands of teaching, industry, government, and research warrants our interest and support.

We need many more graduate centers, and they should be better distributed geographically. Three-quarters of all doctoral degrees are granted by a handful of universities located in 12 States. The remaining States with half our population produce only one-fourth of the Ph. D.'s.

New industries increasingly gravitate to or are innovated by strong centers of learning and research. The distressed area of the future may well be one which lacks centers of graduate education and research. It is in the national interest to encourage establishment of these critically needed centers of advanced learning, especially in parts of the Nation now lacking them.

I recommend enactment of a Federal grant program administered by the Department of Health, Education, and Welfare for the development and expansion of new graduate centers. I also urge appropriation of the increased funds requested in my 1964 budget for expansion of the National Science Foundation program of science development grants, which will also contribute to strengthening of graduate education.

Our experience under the National Defense Education Act with respect to modern language and area centers has demonstrated that Federal aid can spur development of intellectual talent. They deserve our continuing support, with assurance that resources will be available for orderly expansion in keeping with availability of teaching talent.

I recommend that the current modern foreign language program aiding public and private institutions of higher learning be extended and expanded.

Improvement of Educational Quality

A basic source of knowledge is research. Industry has long realized this truth. Health and agriculture have established the worth of systematic research and development. But research in education has been astonishingly meager and frequently ignored. A fraction of 1 percent of this Nation's total expenditures for education is now devoted to such research. It is appalling that so little is known about the level of performance, comparative value of alternative investments, and specialized problems of our educational system—and that it lags behind, sometimes by as much as 20 or even 50 years, in utilizing the results of research and keeping abreast of man's knowledge in all fields, including education itself.

Highest priority must be given to strengthening our educational research efforts, including a substantial expansion of the course content improvement programs which the Government has supported, particularly through the National Science Foundation. Two interrelated actions are necessary:

1. I have recommended appropriations in the 1964 budget for substantially expanding the National Science Foundation science and mathematics course materials program and the Office of Education educational research program.

2. I recommend legislation to broaden the Cooperative Research Act to authorize support of centers for multipurpose educational research, and for development and demonstration programs; and to broaden the types of educational agencies eligible to conduct research.

The second step to improvement of educational quality is teacher training. The quality of education is determined primarily by the quality of the teacher. Yet one out of every five teachers in the United States has either not been certified by his State as qualified to teach or failed to complete 4 years of college study. In the field of English,

between 40 and 60 percent of the secondary school teachers lack even the minimum requirement of a college major in that subject. Thus it is not surprising that, largely because of unsatisfactory elementary and secondary school instruction, our colleges and universities are now required to spend over $10 million annually on remedial English courses.

The lack of teacher quality and preparation in other fields is equally disturbing. More than two-thirds of our 1.6 million teachers completed their degree work more than 5 years ago. Yet, within the past 5 years, major advances have been made—not only in the physical, biological, engineering, and mathematical sciences, but also in specialized branches of the social sciences, the arts and humanities, and in the art of teaching itself.

In addition, we lack sufficient trained teachers for 6 million handicapped children and youth, including 1.5 million mentally retarded and another 1.5 million with very serious social and emotional problems. Only through special classes, taught by specially trained teachers, can these children prepare for rehabilitation, employment, and community participation. Yet less than one-fourth of these children now have access to the special education they require, primarily because of the lack of qualified special teachers, college instructors, research personnel, and supervisors. It is estimated that 75,000 special teachers—55,000 more than presently available—are needed for the mentally retarded alone.

The teacher training support programs of the National Science Foundation and the Office of Education have demonstrated their value.

I recommend, therefore:

That the National Science Foundation program for training institutes for teachers in the natural sciences, mathematics, engineering and social sciences be expanded to provide for upgrading the knowledge and skills of 46,000 teachers, as provided in my 1964 budget recommendations;

That new legislation be enacted to (a) broaden authority for teacher institutes financed by the Office of Education, now restricted to school guidance counselors and language teachers, to other academic fields; (b) authorize a program of project grants to help colleges and universities improve their teacher preparation programs by upgrading academic courses and staff, by encouraging the selection and retention of their most talented prospective teachers, and by attracting and training teachers from new sources such as retired military personnel or women whose family responsibilities permit them to teach; and (c) authorize training grants through colleges and universities for teachers and other education personnel requiring specialized training with particular emphasis on the training of teachers of the mentally retarded and other handicapped children, teachers of gifted or culturally deprived children, teachers of adult literacy, librarians, and educational researchers.

Strengthening Public Elementary And Secondary Education

Improved research and teacher training are not enough, if good teachers do not choose to teach. Yet present salary schedules in some cases are too low at the start to compete against other positions available to college graduates. In almost all cases, they are too low at the top to retain our ablest young teachers. Without sufficient incentive to make teaching a lifetime career, teachers with valuable training and experience but heavy family responsibilities too often become frustrated and drop out of the profession. Their children may never try to enter. Although teachers' salaries have generally improved in the Nation in recent years, there are still districts which have starting salaries below $3,000.

Good teachers, moreover, need good schools. Last year, over 1,500,000 children were in overcrowded classrooms and an estimated 2 million others were studying amid grossly substandard health and safety conditions. In many areas school dropouts, or the education of the economically disadvantaged, the culturally deprived, the physically or mentally handicapped, and the gifted require specially designed programs which simply are not available.

I am not the first, but I hope to be the last, President to be compelled to call these needless shortcomings to the Nation's attention. These are national problems crossing State boundaries, and deserving of national attention. In our mobile population—where every year one out of five families moves, sometimes across the street, but often across State lines—every family has reason to make teaching in every State a more rewarding and productive profession, and to help every State strengthen its public elementary and secondary education, particu-

larly in those school districts that are financially unable to keep up.

Yet let us face the fact that the Federal Government cannot provide all the financial assistance needed to solve all of the problems mentioned. Instead of a general aid approach that could at best create a small wave in a huge ocean, our efforts should be selective and stimulative, encouraging the States to redouble their efforts under a plan that would phase out Federal aid over a 4-year period.

I recommend, therefore, a 4-year program to provide $1.5 billion to assist States in undertaking under their own State plans selective and urgent improvements in public elementary and secondary education including: (1) increasing starting and maximum teacher salaries, and increasing average teacher salaries in economically disadvantaged areas; (2) constructing classrooms in areas of critical and dangerous shortage; and (3) initiating pilot, experimental, or demonstration projects to meet special educational problems, particularly in slums and depressed rural and urban areas.

I also recommend extension of the National Defense Education Act programs which contribute to improving the quality of elementary and secondary education. Grants for testing, guidance, and counseling programs should be expanded and continued beyond the 1964 expiration date. This program has great relevance for the detection of incipient problems which inhibit learning and for development of the talents of our youth. NDEA assistance for science, mathematics, and foreign language laboratory equipment—which is essential for adequate educational programs using newly developed teaching methods—should also be continued beyond 1964.

Finally, in regard to elementary and secondary schools, I recommend a 4-year continuation of those portions of the federally affected area laws which expire June 30, 1963. These statutes now assist some 4,000 school districts located in every State, which together enroll one-third of all public elementary and secondary school pupils in the Nation. Almost 60,000 critically needed classrooms have been constructed at a cost of $1.15 billion to house more than 1,700,000 pupils; and school-operating budgets have been supplemented by more than $1.7 billion. For fiscal 1964 the present provisions would be extended. Limited modifications of the existing provisions, which would take effect beginning in 1965, would overcome certain inequities demonstrated by past experience. Also, the District of Columbia should be added to the jurisdictions eligible to participate.

Vocational and Special Education

Since the wartime administration of President Woodrow Wilson, Congress has recognized the national necessity of widespread vocational education. Although revised and extended frequently since 1917, the National Vocational Education Acts are no longer adequate. Many once-familiar occupations have declined or disappeared and wholly new industries and jobs have emerged from economic growth and change. The complexities of modern science and technology require training at a higher level than ever before.

For this reason, 2 years ago I requested the Secretary of Health, Education, and Welfare to convene an expert and representative committee to review and evaluate the present vocational education laws and to make recommendations for their modernization. The report of that committee shows the need for providing new training opportunities—in occupations which have relevance to contemporary America—to 21 million youth now in grade school who will enter the labor market without a college degree during the 1960's. These youth—representing more than 80 percent of the population between the ages of 16 and 21—will be entering the labor market at a time when the need for unskilled labor is sharply diminishing. It is equally necessary to provide training or retraining for the millions of workers who need to learn new skills or whose skills and technical knowledge must be updated.

Both budgetary action and enactment of new legislation is called for. In my 1964 budget I have recommended funds which would permit doubling the number of workers to be trained by the Manpower Development and Training Act programs. These programs have, in their brief existance, already enrolled more than 18,000 men, women, and out-of-school youths who are being trained in occupations where jobs are available.

In addition, I recommend legislation to—

(a) Expand the scope and level of vocational education programs supported through the Office of Education by replacing the Vocational Education Act of 1946 with new grant-in-aid legislation aimed at meeting the needs of individuals in all age groups for vocational training in occupations where they

can find employment in today's diverse labor markets, and

(b) Provide employment and training opportunities for unemployed youth in conservation and and local public service projects. The details of this latter proposal are contained in a separate bill—the Youth Employment Opportunities Act—and will be discussed in a later message to be sent to the Congress.

Continuing Education

Education need not and should not end upon graduation at any level. An increasing number of Americans recognize the need and the value of continuing education. The accountant, the salesman, the merchant, the skilled and semiskilled workers, all interested in self-improvement, should all be afforded the opportunity of securing up-to-date knowledge and skills. Only one American in eight has even taken as much as one college course. Yet the State universities and land-grant colleges which offer the majority of extension or part-time courses enroll less than a half million people. Due to inadequate finances and facilities, these colleges can offer only a very limited adult education program. I recommend legislation authorizing Federal grants to States for expanding university extension courses in land-grant colleges and State Universities. Despite our high level of educational opportunity and attainment, nearly 23 million adult Americans lack an eighth grade education. They represent a staggering economic and cultural loss to their families and the Nation. I recommend again, as part of this comprehensive bill, a program to assist all States in offering literacy and basic education courses to adults.

The public library is also an important resource for continuing education. But 18 million people in this Nation still have no access to any local public library service and over 110 million more have only inadequate service.

Advanced age, lack of space, and lack of modern equipment characterize American public library buildings in 1963. Their rate of replacement is barely noticeable: 2 percent in a decade. There are now no Carnegie funds available for libraries—nor have there been for 40 years.

The public library building is usually one of the oldest governmental structures in use in any community. In one prosperous Midwestern State, for example, 30 percent of all public library buildings were built before the year 1910, and 85 percent were erected before 1920. Many other States are in a similar situation.

I recommend enactment of legislation to amend the Library Services Act by authorizing a 3-year program of grants for urban as well as rural libraries and for construction as well as operation.

Conclusion

In all the years of our national life, the American people—in partnership with their governments—have continued to insist that "the means of education shall forever be encouraged," as the Continental Congress affirmed in the Northwest Ordinance. Fundamentally, education is and must always be a local responsibility, for it thrives best when nurtured at the grassroots of our democracy. But in our present era of economic expansion, population growth, and technological advance, State, local, and private efforts are insufficient. These efforts must be reinforced by national support, if American education is to yield a maximum of individual development and national well being.

The necessity of this program does not rest on the course of the cold war. Improvement in education is essential to our Nation's development without respect to what others are doing. Nevertheless, it is worthwhile noting that the Soviet Union recognizes that educational effort in the 1960's will have a major effect on a nation's power, progress, and status in the 1970's and 1980's. According to a recent report prepared for the National Science Foundation, Soviet institutions of higher education are graduating three times as many engineers and four times as many physicians as the United States. While trailing behind this country in aggregate annual numbers of higher education graduates, the Soviets are maintaining an annual flow of scientific and technical professional manpower more than twice as large as our own. At the same time, they have virtually eliminated illiteracy, with a 23-fold increase since the turn of the century in the proportion of persons with an education beyond the seventh grade. This Nation's devotion to education is surely sufficient to excel the achievements of any other nation or system.

The program here proposed is reasonable and yet far reaching. It offers Federal assistance without Federal control. It provides for economic growth, manpower development, and progress toward our

educational and humanitarian objectives. It encourages the increase of the knowledge, skills, attitudes, and critical intelligence necessary for the preservation of our society. It will help keep America strong and safe and free. I strongly recommend it to the Congress for high priority action.

JOHN F. KENNEDY.

The National Education Improvement Act of 1963: Short Review of Titles

A COMPREHENSIVE program of Federal aid to meet selected and urgent needs of American education on all levels from elementary school through graduate education; to promote educational quality, expand opportunity for education, and to increase the capacity of our educational institutions; to provide for the Nation's needs in skilled manpower, national growth, and national security.

Title I.—Expansion of opportunities for individuals in higher education

Part A—Student Loans (title II of National Defense Education Act).—To remove the $90 million ceiling in the present law and replace with $135 million for fiscal year 1964, and necessary sums for 2 succeeding years. Extends forgiveness of up to 50 percent of loan to all teachers—elementary, secondary, college, and university. Provides for a national study of why able students fail to attend or complete college. Students in public and private nonprofit higher education institutions eligible.

Part B—Insurance of student loans.—Federal guarantee of student loans by banks and colleges and universities. Maximum aggregate loans insured during 3-year period, $150 million. Students in public and private nonprofit higher education institutions eligible.

Part C—Student work-study.—Authorizes $22.5 million for fiscal year 1964, and necessary sums for 2 additional years to pay 50 percent of wages to needy students for campus employment of an educational character, up to 15 hours per week. Students in public and private nonprofit higher education institutions eligible.

Part D—Graduate fellowships (title IV of National Defense Education Act).—Increase graduate fellowship program from 1,500 to 10,000 annually for fiscal year 1964 and for 2 succeeding years, plus 2,000 additional summer session fellowships. Students in public and private nonprofit higher education institutions eligible.

Title II.—Expansion and improvement of higher education

Part A—Construction loans for institutions of higher education.—Authorizes $1 billion aggregate over 3 years for Federal loans to institutions of higher education, or higher education building agencies for construction of academic facilities. Public and private nonprofit institutions eligible.

Part B—Public junior colleges.—Authorizes $50 million in fiscal year 1964 and such sums as are necessary for 2 succeeding years for grants to States to construct public community junior colleges.

Part C—College-level technical education.—Authorizes $20 million for fiscal year 1964 and such sums as are necessary for each of next 2 years for project grants to institutions of higher education for 2-year college level programs to train semiprofessional technicians in engineering, science, and health occupations. Includes construction and equipment of academic facilities. Up to 50 percent of construction or program costs can be supported with a Federal grant. Both public and private nonprofit institutions eligible.

Part D—College libraries.—Authorizes $40 million for fiscal year 1964 and such sums as are necessary for each of next 2 years for grants to colleges and universities for acquisition of library books and other materials and for construction of library facilities. Up to 25 percent of fiscal year 1963 expenditures for library books and materials and 50 percent of construction costs can be supported by Federal grants. Both public and private nonprofit institutions eligible.

Part E—Graduate schools.—Authorizes project

(*Continued on p. 18*)

The Administration's Proposals for Higher Education

ANTHONY J. CELEBREZZE

The following excerpts are taken from the statement by Secretary Celebrezze before the Committee on Education and Labor, U.S. House of Representatives, on February 4, 1963.

Student Loans

We must not overlook the cost of college attendance as a limiting factor on college enrollments. Intelligence is not related to family income or ability to pay the costs of going to college, but actual enrollment is. Estimates indicate that between 25 and 40 percent of our most capable students—those with IQ's of 120 and above, who want to go to college—do not now go beyond high school, largely because of financial need. Further evidence that higher education is largely dependent upon the ability of the student to pay the price is indicated by the fact that private education continues to draw 50 percent of its students and public education 25 percent from the top 10 percent of the Nation's income groups.

In 1958 the Federal Government began a program of financial assistance through student loans. Since that time, more than 350,000 students in 1,500 institutions have received NDEA loans exceeding $230 million. This year an estimated 220,000 will borrow $110 million—an average of $500 each. Yet the demand for loan funds is not being met. More than 100 institutions have requested greater Federal contributions than the maximum authorized.

Many students come from families whose incomes are such that they are unable to obtain loans under the present national defense student loan program. However, for the 6 million families in the middle-upper income category, the spiraling costs of college education present a heavy financial burden, especially severe if the family is large. To assist such families, we are recommending the establishment of a Federal loan insurance program that would provide them easier access to commercial loans and spread the payments for college costs over a longer period.

Work Opportunities

More students help finance their college education from their part-time earnings than from any other source of outside aid, such as scholarships and loans. Although many students find jobs off the campus, most of the earnings are from work-study programs administered by and, for the most part, financed by the colleges and universities. College-paid undergraduate employment now totals about $100 million a year and provides average earnings of about $285 for 350,000. The Federal Government can help additional thousands of students by undertaking partial support of educationally related oncampus student employment.

Fellowships

The high cost of obtaining a graduate education is the primary cause of attrition from study for advanced degrees. Of the total number of graduate students currently enrolled, only about 40 percent are full-time students. The others are part-time students because of the need to earn money to support themselves and their families. The long years necessary before part-time students can earn doctorates aggravate this problem. Only in the natural science fields, where fellowships and assistantships are relatively abundant, can students earn their doctorates in 4 or 5 years. In the social sciences and the humanities, the average time required is over 8 years. It is essential that we increase fellowship aid so as to attract additional thousands of graduate students and in order to minimize the attrition rate of those graduate students already enrolled.

Facilities

To strengthen higher education, the bill would assist the Nation's colleges and universities to construct urgently needed classrooms, laboratories, libraries, and technical facilities, would promote the establishment and strengthening of educational centers of excellence in graduate and technical education, and would expand Federal support for modern foreign language and area studies under the National Defense Education Act.

College enrollments in 1970 are expected to be double those of 1960. Approximately 7 million students will be in attendance by 1970, with the greatest increase in entering enrollments coming in

the next 2 years. To provide for additional students, replace obsolete structures, and modernize usable buildings, institutions of higher education should invest an average of $2.3 billion annually. Expenditures currently fall short of this by $1 billion annually.

General instructional programs and facilities are especially difficult to finance. The college housing loan program, now authorized at $300 million annually, enables institutions to construct only such income-producing facilities as dormitories, dining halls, and student centers. Needs for academic facilities are even more acute.

Community Colleges

Increased numbers of public community colleges would provide higher education opportunities to thousands of students who would continue their schooling if they had access to colleges close to their homes. To meet the Nation's needs for general-purpose junior colleges with degree transfer programs, we should open 25 to 30 new community colleges annually during the next 10 years.

Technical Education

The need for expanded college-level technical education is also acute. Because of the present shortage of subprofessional technicians, many highly trained scientists and engineers are forced to serve as draftsmen or laboratory aides. Whereas the satisfactory ratio is considered to be 2 or 3 technicians to 1 professional engineer, the present ratio ranges from 7 to 11.5 technicians for every 10 engineers.

Nor is there any indication that the situation is righting itself. The Nation's institutions of higher education are turning out approximately 2 technicians for every 5 engineers—only 15,000 a year against an estimated need of 80,000 a year.

Libraries

With regard to college libraries, when measured against the *minimum* standards of the American Library Association, 52 percent of all libraries in 4-year institutions now have substandard collections, 49 percent are inadequately staffed, and 58 percent receive less than 5 percent of total institutional expenditures . . .

Improvement of Instruction

The most significant factor in the learning process, next to the aptitude of the learner, is the quality of instruction. Concern about the quality of teaching in the Nation's schools has already led to Federal assistance programs which are producing substantial improvement in the teaching of mathematics, science, and foreign languages. The Nation's need for maximum development of human resources requires that this wave of improvement be expanded and extended to other vital fields. Title III attacks this problem at five significant points: Improvement of the teaching of those already in service, strengthening the preparation of future teachers' training, expanding training programs for personnel who deal with specialized needs of children, educational research and the demonstration of tested techniques, and improvement of educational statistics essential to the maintenance of effective schools . . .

Continuing Education

Our increasingly complex society demands a continuous process of lifelong learning and relearning. An insistent need and demand from the general public has caused many of our State universities and colleges to offer certain courses or kinds of instruction in extension. These offering have of necessity been limited in number and in scope. The educational opportunities of great numbers of people who are above the usual school age have been limited. Many of these people, because of remoteness from a university campus, cannot attend regular courses or programs. Increasingly, extension courses are becoming an important means for technical workers in an ever-widening range of occupations to upgrade their skills and keep abreast of new developments. Such educational opportunities will obviously have a far-reaching effect on industrial efficiency and the national economy. The fact that it has been necessary for these broad extension programs in general to be self-supporting has seriously limited the extent as well as the adequacy of their service . . .

Conclusion

In considering this education bill we are focusing on the very heart and substance of our Nation's security, our economic growth, and the promise America will hold for individual aspiration and fulfillment in generations to come . . .

The challenge in education is now. We must meet it. And I am sure that working together we will meet it . . .

The National Education Improvement Act of 1963

FRANCIS KEPPEL

The following are excerpts from the statement by Mr. Keppel, Commissioner of Education, Department of Health, Education, and Welfare, on the "National Education Improvement Act of 1963" before the House Committee on Education and Labor, February 5, 1963.

. . . The demands of national security and economic growth have joined our traditional concern for equality of opportunity for the individual; together they require a reassessment of the key role of education in our society. Education is not only good for the individual—it is essential to our way of life and our security. The schools and colleges and universities, the librarians and the laboratories, that have served us so well in the past must be greatly strengthened and expanded to meet their future responsibilities. We rightly take pride in the freedom and independence of these institutions. The policy of the Federal Government, in planning its part in the effort we must make as a Nation, must be such that at the end of any program, the institutions are stronger and freer than they were at the start. I am profoundly convinced that independent institutions and freedom of learning and teaching are the fundamental basis of our society . . .

Student Financial Assistance

In 1962, college costs at public institutions were distributed, on the average, among the following sources: student's family contribution $888.00, student's earnings $370.00, scholarships $104.00, loans $74.00, miscellaneous $44.00, for a total of $1,480.00.

In our private institutions of higher education, of course, college costs were higher—$2,240—but the means of financing them were approximately proportional to those chosen to finance an education in a public college.

The college officer in charge of financial aid tries to combine these sources of funds to meet the individual case. The student with very little help available from his family clearly requires scholarship help, as well as loans and the chance to add to his income by working.

Since average tuition and required fees in our public colleges have risen from $112 in 1949 to $216 in 1961—an increase of 93 percent—and in our private colleges during the same period to well over $1,000, it is increasingly evident that the family of middle-upper income with several children desiring to attend college at the same time is having a difficult time paying for the costs of college out of current income. Such families are not usually eligible for loan or scholarship aid under the means tests applied by most colleges, and yet the brain power of their children is as essential to the national welfare as is that of less privileged children who receive aid through the existing NDEA loan funds. For the millions of families in the middle-upper income category, then, the President has proposed a new program of federally insured commercial loans for students . . .

A self-supporting loan insurance mechanism similar to that successfully developed by the Federal Housing Administration and other Federal agencies would act as a catalyst for drawing funds into this area of student aid needs by encouraging more banks and other credit institutions to lend for educational purposes on repayment terms suited to the special needs of college students and their parents. The proposed college loan insurance program thus offers a means of effectively supplementing with additional private credit the limited lending capacity of the colleges, direct Federal loans through the NDEA program, and the pioneering efforts of some State funds and other commercial lenders. The insured loans should be available to all self-reliant students in good standing willing to invest in their own future.

The bill also proposes a new work-study program—limited to 15 hours a week for each student—to add

still further to the solution of the financial problems of individual students. To the approximately $100 million now spent annually by our undergraduate colleges for student employment, the bill would add $22.5 million during fiscal year 1964 for Federal support of one-half the pay of students employed in educationally related work. On the assumption that the colleges would allot their work-study funds on the basis of 80 percent for undergraduates, 20 percent for graduate students, 36,000 undergraduates could earn up to $1,000 each during the first year of the program and an additional 4,500 graduate students could earn up to $2,000.

NDEA student loans, the proposed federally insured loan program, and the work-study plan may not meet all critical student aid needs. College financial aid officers know that ousands of high school students do not plan to go on to college because they do not have assurance of sufficient financial backing to pay for a college education. Moreover, lack of money ranks among the three top reasons leading to dropout on the part of some 40 percent of our college students who do not subsequently achieve a degree.

In the years immediately ahead, this situation, if left unchecked, will grow more serious as more and more capable young men and women with limited funds seek the benefit of higher education. We can ill afford to deny them this opportunity to contribute to our national strength and economic growth merely because they are financially unable to meet the mounting costs of higher education.

Thus we believe that additional sources of financial aid to supplement student loans are urgently required. The President has, therefore, suggested a comprehensive national study to determine the reasons why able young persons fail to attend or complete college.

In summary, to the college administrator, the combination of means proposed in the bill will make it possible to take a leap forward in solving the financial problems of his students, and therefore, of his Nation.

Graduate Education

The tidal wave of students moving toward college classrooms will require at least 406,000 new teachers during the next 10 years. This space-age generation of college students has a right to the same quality of instructional competence as their predecessors, and even higher if possible. That means the number of professors in preparation must be greatly accelerated.

Much has been said about dropouts. I would like to call your attention to the dropout problem at the highest level—among those who begin graduate-degree programs and do not complete their M.A. or Ph. D. studies. These men and women have very different problems from the juvenile delinquents but their loss as academic personnel is not less serious, since they are the potential solution to the teacher shortage at both the graduate and undergraduate levels. Everything must be done that is economically feasible to keep these people at their studies. Yet, if the present rate of completion of graduate study continues, probably only 141,000 doctorates will be earned this decade, and of these only about 46 percent will enter or remain in college teaching. Our estimates show, therefore, that by 1970 colleges and universities will not meet the minimum acceptable standards of a faculty consisting of 30 percent doctorate holders but rather will fall short some 90,000 college teachers possessing the doctorate.

The NDEA graduate fellowship program is designed to encourage students to prepare for college teaching careers, but the ceiling of 1,500 fellowships a year is much too low to meet the need. Four of every five applications for NDEA fellowships have to be refused. The bill proposes that 10,000 fellowships be authorized and that, in addition, 2,000 summer school fellowships be made available for college teachers and graduates who wish to accelerate acquisition of the doctorate. To the college president and dean of faculty, this major increase in the source of supply will make it possible to maintain academic standards as higher education grows to meet the demands of coming generations of students.

In recent years there has been a growing demand for persons with advanced training to enter business, industry, and government. The demand is particularly great for scientists. The President's Science Advisory Committee reported that we must increase the annual award of Ph. D.'s in engineering, mathematics, and the physical sciences from 3,000 in 1960 to 7,500 in 1970, and to increase the number of first-year graduate students in engineering, mathematics, and physical sciences alone from

17,000 in 1960 to 40,000 in 1970. Without the support of graduate study set forth in the bill, we shall fall far short of meeting these needs.

To provide larger numbers of college professors and other highly trained personnel requires an expansion of graduate schools. As the President pointed out in his Message on Education, three-fourths of all doctoral degrees are granted by 20 universities located in 12 States. The remaining States, with one-half of our population, produce only one-fourth of the Ph. D'.s. If we are to increase dramatically the supply of highly trained teachers and other critically needed professional personnel, we need to encourage development of additional numbers of high-quality graduate schools. It is important, moreover, that these new graduate centers be more widely dispersed geographically. Students should not be required to traverse the Nation to find a suitable school. These centers could be built either upon a cluster or system of institutions, public or private, or by strengthening a single college or university as the needs of the area may dictate. The experience of the NDEA language and area centers has shown the feasibility of this approach to building new graduate programs.

Our objective should be about 100 doctorates annually per million population. This means that to serve the 190 million population, with one institution for each 2,500,000, some 75 substantial graduate schools are needed. There is no lack of will to expand—only a lack of funds. The proposal before you calls for $40 million for fiscal 1964 to help such centers to get underway. It is important to note that the existence of new centers of graduate and professional studies will do far more than provide the staff needed for higher education. The centers will become the focus of new economic development and will, therefore, contribute to the national goal of economic growth. In the area in which I worked since the end of the war, the most dramatic development has been the growth of new industries along Route 128 which forms a semicircle around the Boston area. It is clear that these developments would not have taken place if the area had not included several major institutions deeply engaged in research and graduate teaching.

Modern Foreign Languages

In connection with this proposal to strengthen graduate education, it is appropriate to pay special tribute to the NDEA modern foreign languages and area studies program which not only acts as a guideline for what we propose but which also has done much to maintain needed balance, as between the sciences and the humanities, in existing Federal support programs.

The aim of title VI of NDEA was to begin a long-range plan which would equip this country with the language skills required to carry out its enormous and growing international commitments. Through fellowships, language and area centers, and sponsored research, this plan authorized a maximum of $8,000,000 a year, primarily to increase the number of people trained in the neglected languages for college teaching and government service.

Eight million dollars was adequate when the number of people was small whose training equipped them to staff these programs. But that barrier has now been lowered. The success of the program so far means that more people have acquired the skills necessary to contribute to this phase of national progress.

On the other hand, the need for further language development has mounted dramatically. The accomplishments to date are in no sense adequate for the need, and progress has not yet reached the point where it might be self-sustaining. Thus, Federal support to language and area centers is in some cases as low as 20 percent of their operating costs, though NDEA allows support up to 50 percent. Our universities could not assume the additional cost of maintaining these centers by themselves, much less entertain any thought of expanding them—yet expansion is clearly dictated by the growing demand of government, of business overseas, and of university interest in international affairs.

Teacher Institutes

The quality of teaching in the Nation's schools has been and must continue to be a matter of national as well as State and local concern. Title III of the bill is directly addressed to this urgent problem. It would provide financial assistance and the stimulation of Federal support to improve the competence of present and future teachers and to promote the development and wider application of improved practices in the schools.

That Federal resources can be use to stimulate and produce substantial improvement in the quality of elementary and secondary education has been

demonstrated in the teaching of mathematics, science and foreign languages. Since the foreign language institutes program was begun in 1959 under the NDEA, 10,321 teachers have received special instruction at 218 language institutes to strengthen and expand instruction in foreign languages in public and private elementary and secondary schools. In 1962, the National Science Foundation supported 911 institutes for some 40,800 science and mathematics teachers, 90 percent of them from elementary and secondary schools. These existing Federal programs result from a wise decision on the part of the Congress concerning the need for upgrading the level of instruction in subjects directly and immediately affecting national security.

It is now evident that the same need exists in other basic subjects and I respectfully submit that the strength of our Nation depends upon high achievement in the social sciences, the humanities, and the fine arts, as well as in the physical sciences. The Teacher Institutes' proposal in this bill would expand the institute programs of the NDEA (now limited to teachers of foreign languages and counselling and guidance personnel) to include teachers of English, humanities and social sciences, librarians and other personnel whose activities in the educational process have a significant impact on the quality of that process.

Teacher Preparation

The proposed expansion of the NDEA institutes program can do much to meet the needs of the 1,800,000 teachers who are at work in our public and private elementary and secondary schools. However, in order to deal with the problem at its taproots, we must raise the standards of teacher preparation to a much higher level of quality. Perhaps in no other single area can so much be done to improve the quality of instruction in our schools than that of improving the standards, intellectual content, and organization of courses and curricula for the future teacher in the schools.

In a significant number of institutions of higher education, promising and effective steps have been taken to improve the quality of teacher preparation programs, but in all too many instances the task of improvement is impeded by lack of funds. The project grants provision of title III is designed to assist the colleges and universities in making these changes:

a. Bringing curricula up to date with the tremendous growth of knowledge and teaching techniques of recent years.

b. Encouraging participation of all faculty of an institution in the preparation of teachers.

c. Improving standards of selection and retention of students.

d. Providing special programs to prepare professionally trained persons for a second career in teaching.

Since World War II, through Federal support, progress has been made in improving the performance of teachers who are already on the job, especially in the sciences, mathematics, and modern foreign languages.

Today the need is critical in the national interest to give the same quality of Federal support to improve preservice programs of teacher education in the colleges and universities . . .

Conclusion

At the center of each of these proposed programs, of course, is the individual. We seek to expand his educational opportunities by providing him the financial assistance he needs to meet rising college costs. We recommend that he be provided with the necessary support to embark on a career as a school or college teacher, or to enter other critical professions, through an increased number of fellowships and expanded graduate facilities. We urge that the quality of his basic education be improved through the raising of the professional qualifications of his teachers and by enabling more able teachers to remain in their teaching careers by paying them competitive salaries . . .

In my judgment the continuation of these programs will strengthen American education as a whole and at the same time strengthen the individual institution of learning.

National Education Improvement Act

(*Continued from p. 12*)

grants to institutions of higher education for expansion of graduate schools including construction, equipment, expansion of faculty, not to exceed 50 percent of construction or program costs of the graduate school expansion program. Authorizes $40 million for fiscal year 1964 and necessary sums for

the next 2 years. Both public and private nonprofit institutions eligible.

Part F—Modern foreign languages (amendments to title VI of National Defense Education Act).—Extends for 2 years the language and area centers and studies program in institutions of higher education and authorizes an increase in appropriations from present $8 million annually to $13 million for fiscal year 1964; and such sums as are necessary for the 2 succeeding years. Public and private nonprofit institutions are eligible.

Title III.—Improvement of educational quality

Part A—Teacher institutes.—Expand the institute program in the National Defense Education Act (now limited to teachers of foreign languages and guidance and counseling personnel), to teachers of English, humanities, social sciences, and library personnel. Elementary and secondary school teachers, college language teachers, and library personnel, public and private nonprofit, eligible to receive stipends. Appropriations authorized are increased from present $14.5 to $37.5 million for fiscal year 1964, and necessary sums for next 2 years.

Part B—Teacher preparation programs.—Project grants to colleges and universities to strengthen departments and programs which prepare elementary and secondary school teachers. Emphasis will be on subject matter courses; $7.5 million for fiscal year 1964 and necessary sums for next 2 years. Public and private nonprofit education institutions eligible.

Part C—Teachers and related personnel requiring specialized training.—Project grants to colleges and universities to strengthen special training of teachers of gifted children and teachers of adult illiterates, culturally deprived children; training of librarians, and other specialized personnel. Public and private nonprofit higher education institutions eligible. For fiscal year 1964, $7.5 million and necessary sums for next 2 years.

Part D—Strengthening education research and demonstrations (amendments to Cooperative Research Act and to title VII of National Defense Education Act (new media)).—Authorizes Office of Education, under cooperative research program, to support educational research centers involving colleges and State and local education agencies. Both public and nonprofit private higher education and research institutions eligible. Extends title VII, National Defense Education Act, new educational media research and demonstration, for 2 more years.

Part E—Educational statistics.—Extends, for 2 years, grants to State education agencies ranging up to a maximum of $125,000 to finance collection of statistics about the character, quality, and quantity of educational programs in the State. Public education agencies only.

Title IV.—Strengthening elementary and secondary education

Part A—Selective and urgent improvement of public elementary and secondary education.—Four-year $1.5 billion program of Federal grants to States for teacher salary improvement; that is, increasing maximum salaries, raising low starting salaries, raising low average salaries in economically disadvantaged districts; support for critical classroom construction needs such as overcrowding, fire and health hazards; support for special projects to improve educational quality particularly in disadvantaged rural and urban areas. Appropriation would be authorized so as to phase out Federal support by the end of program. Public schools only.

Part B—Acquisition of science, mathematics, and modern foreign language instruction equipment (amendments to title III of National Defense Education Act).—Extends for 2 years title III of National Defense Education Act for purchase of equipment needed in science, math, and modern foreign language instruction in elementary and secondary schools. Grants to public schools—loans to private nonprofit schools as in present law.

Part C—Guidance, counseling, and testing (amendments to title V of National Defense Education Act).—Extends counseling and guidance title of National Defense Education Act for 2 years and increases authorization from $15 million to $17.5 million for fiscal year 1964 and succeeding years. Authorizes testing program for all seventh- and eighth-grade students. Public schools only, except for testing in private nonprofit schools.

Part D—Federally affected areas (amendments to Public Law 815 and Public Law 874).—Extends all expiring provisions for 4 years; no modifications in payment formulas for first year, with some reduction in the formulas beginning the second year and standardization of the eligibility conditions at 5 percent in the third year; and inclusion of the District of Columbia. Public schools only as in present law.

Title V.—Expansion and improvement of vocational education and special education

Part A—Vocational education (amendments to vocational education acts, including title VIII of National Defense Education Act).—Authorizes an increase in Federal expenditure for vocational education from present $50 million to $73 million for fiscal year 1964, and necessary sums for each of the succeeding 4 years. Allotments to the States will be based on various age groups needing vocational education and per capita income. State plans may continue to follow previous vocational education statutes for transitional period of 2 years but must conform to new plan requirements by fiscal year 1966. Grants under Smith-Hughes Act of 1917 will continue. Public school systems only are eligible.

Part B—Education of handicapped children.—Authorizes grants to State education agencies and project grants to institutions of higher education to provide special training of teachers of handicapped children, that is, deaf and blind, mentally retarded, emotionally disturbed, crippled, etc. Authorizes grants to institutions of higher education for scholarships to teachers of deaf children. Authorizes grants for research and demonstration projects in education of handicapped children. Both public and private nonprofit institutions eligible. Increases $2.5 million now authorized for mentally retarded or deaf children to $15 million for fiscal year 1964, and such sums as are necessary for the next 2 years.

Title VI.—Expansion of continuing education

Part A—General university extension education.—Authorizes grants to States for expansion of university extension courses in land-grant colleges and State universities; $9,040,000 a year for each of 3 years is authorized.

Part B—Adult basic education.—Authorizes $5 million for fiscal year 1964 and such sums as may be necessary for each of the 2 succeeding years in grants to States for basic education of adults up to eighth grade. Public schools only.

Part C—Public libraries (amendments to Library Services Act).—Grants to States for library services are expanded from rural areas to include all areas of the State and to include construction of public library facilities. Appropriations authorized are increased from present ceiling of $7.5 million to $45 million in fiscal year 1964, and such sums as may be necessary for each of the 2 succeeding years.

Title VII.—General provisions

Defines educational institutions and agencies referred to in the bill; provides for interchange of personnel between Office of Education and State educational agencies. Authorizes the Commissioner of Education to establish Advisory Councils to advise and consult with him.

OFFICE OF EDUCATION *Studies* AND *Surveys*

College Applicants, Entrants, and Dropouts

MULTIPLE APPLICATIONS for admission to college have erosive effects not only on student resources but also on institutional resources. In addition to causing financial waste to both parties, they are often responsible for unnecessary demands on the energies and skills of personnel in secondary schools and colleges.

Findings from an Office of Education study of these problems in 20 colleges and universities indicate that 1 of 7 admitted students who were reported as no-shows (many of them with bright prospects for academic success) had not enrolled in any institution up to a year after admission.

The students gave several reasons for not entering: "I could not afford to attend any of the institutions to which I was admitted," was the reason checked most frequently by prospective students who failed to enroll in any college (45 percent). The second ranking reason (13 percent) was "I took a full-time job." In general, the study found that the number of prospective students who attributed their failure to enroll in college to factors indentified with lack of economic resources was larger than the number of students who gave all other reasons combined. Marriage was a much more important deterrent to college attendance for girls than it was for boys. Failure to be admitted to the college or university of their first choice ranked low among reasons for not enrolling.

There were encouraging replies indicating that more than three-fourths of the no-shows who did not enroll in any college during the 2 years of the study were planning to enroll later. This percentage may, however, represent high hopes rather than realistic plans.

These findings are from the manuscript report of a study, supported by cooperative research funds, in which 20 institutions of higher education collected data on dropouts and students enrolled for the academic year 1956–57 and on no-shows for the fall of 1956 and the fall of 1957. The summary report of the study entitled "College Applicants, Entrants, and Dropouts" is being prepared by Robert E. Iffert, Acting Coordinator for Higher Education Research, and Betty S. Clarke, Research Assistant.

International Education

International Science Conference

APPROXIMATELY 2,000 experts from 80 countries spent 17 days, February 4 to 20, studying 12 problem areas of national development at an international science conference held in the Palais des Nations in Geneva, Switzerland. The participants represented many fields including economics, biology, physics, geology, city planning, medicine, and nutrition.

The participants and other specialists submitted more than 1,800 papers in a dozen different areas ranging from industrial development through natural resources to health and nutrition. Of these, 130 were written by Americans. The papers made recommendations on a variety of specific subjects, including mathematical formulas for injecting foreign capital and means of putting new sources of energy to work in ancient areas of the world.

The conference was set in motion by a resolution of the United Nations Economic and Social Council adopted August 3, 1961, and was supported in part by the Agency for International Development, which contributed half a million dollars. The United States delegation of approximately 100 authorities was headed by Walsh McDermott, chairman of the Department of Public Health of Cornell University Medical College.

Peace Corps Around the World

As of November 30, 1962, a total of 3,478 volunteers were serving in the Peace Corps in 38 countries:

Country	*Number of volunteers*	*Country*	*Number of volunteers*
Afghanistan	9	Liberia	90
Bolivia	70	Malaya	115
Brazil	143	Nepal	70
British Honduras	34	Niger	7
Cameroun	40	Nigeria	189
Ceylon	38	N. Borneo/Sarawak	62
Chile	100	Pakistan	121
Colombia	167	Peru	204
Cyprus	22	Philippines	579
Dominican Republic	67	St. Lucia	15
Ecuador	166	Senegal	5
El Salvador	23	Sierra Leone	125
Ethiopia	275	Somalia	44
Ghana	115	Tanganyika	62
Honduras	25	Thailand	99
India	75	Togo	45
Ivory Coast	31	Tunisia	65
Iran	43	Turkey	39
Jamaica	34	Venezuela	67

An additional 862 were in training to serve in 14 countries:

Country	*Number of volunteers*	*Country*	*Number of volunteers*
Bolivia	60	Nigeria	134
Colombia	64	Nyasaland	47
Costa Rica	30	Pakistan	41
Dominican Republic	118	Philippines	106
Ivory Coast	28	Senegal	38
Morocco	82	Thailand	50
Niger	13	Venezuela	28

OE International Education News

EDUCATORS from Chile and Mexico participated in two special group-projects under the auspices of the Bureau of International Education recently. The first group, 30 teachers from the Escuela Normal Superior in Mexico, participated in a 21-day program January 2 to 23, which took them to the University of North Carolina and to several teachers colleges in New York State. The second group, 10 normal school professors from Chile, attended a 4-week, (January 8 to February 5) seminary in teacher training arranged at the University of Puerto Rico, San Juan, Puerto Rico.

DURING December, the Division of Technical Assistance and Exchange Programs reviewed more than 2,000 applications received during the recruiting period for Government grants to teach or to participate in a summer seminar abroad.

The teacher exchange section will process about 800 grants for the 1963–64 academic year.

OE program notes

National Defense Education Act

New language research projects

The abilities of New England high school students who speak a Canadian variant of French are receiving special attention through a unique project recently begun at Bowdoin College, Maine, under contract with the Office of Education, through the research and studies program authorized under title VI (language development) of the National Defense Education Act.

Over a million and a half Americans of French descent living in the New England States (notably in Maine, New Hampshire, and Massachusetts) have preserved their linguistic and cultural heritage, both in their schools and in family life. They form an important reservoir of potential French teachers at a time of increasing national demand for more and better language instruction.

The Bowdoin College project will provide teaching materials in standard French which will be especially suitable for young French-speaking Americans. These materials—a textbook and related tape recordings for classroom use—will be designed to stimulate high school students among the French-speaking group to learn standard French and to study the culture of contemporary France, and at the same time to maintain an active interest in their own local heritage.

Gerard Brault, a former member of the Bowdoin faculty and now associate professor of romance languages and vice dean of the Graduate School of Arts and Sciences, University of Pennsylvania, will direct the project, which will cost about $12,000.

Other language research and studies projects recently contracted include the following:

Harvard University: Experimentation to determine the effectiveness of a system of programed self-instruction in teaching the Arabic writing system. John B. Carroll, professor of educational psychology at Harvard's Graduate School of Education, will direct the project.

Yale University: Preparation of a textbook of *Advanced Japanese Conversation*, and accompanying tape recordings. Samuel E. Martin, professor of Far Eastern linguistics at Yale, will direct the project.

Yale University: Compilation of a set of teaching materials for Cebuana Visayan, the principal dialect of a language spoken by almost half the population of the Philippines. John U. Wolff of the Department of Indic and Far Eastern Languages and Literatures at Yale will direct the project.

The Colorado State University Research Foundation: Preparation of two readers in Panjabi, a language spoken by about 35 million people in India and Pakistan. Assistant professor Ved Prakash Vatuk of the Colorado State University Department of Modern Languages will direct the project.

The Hartford Seminary Foundation: Preparation of a set of introductory teaching materials for Panjabi. H. A. Gleason, Jr., professor of linguistics at the Hartford Seminary Foundation, will be the principal investigator.

Boris I. Gorokhoff, an independent research linguist: Preparation of a brief preliminary review of foreign language development in the Soviet Union. This report, designed primarily for administrative purposes, will help to determine the need and indicate the resources for further research on this subject.

The Center for Applied Linguistics of the Modern Language Association of America: Preparation of a manual for Malagasy, the native language of nearly all the 5 million people of the Malagasy Republic (Island of Madagascar). The project linquist will be Catherine C. Garvey, who will prepare the manual under the supervision of Charles A. Fergason, director of the Center for Applied Linguistics.

The Modern Language Association of America: A study of undergraduate teacher training programs in modern foreign languages in the light of the NDEA Language Institutes experience. This study will examine the effect of institute procedures on regular academic language programs and determine whether these programs have changed enough since 1958 to warrant modifying the institutes. A. T. MacAllister, professor, Princeton University, will be the principal investigator.

Education for Cuban Refugees

More than 19,000 Cuban refugee children and 20,000 Cuban college students and adults are receiving help with their education from the Federal Government. Federal funds for these Cuban refugee

education programs, which are being allocated by the Office of Education, totaled about $15 million at the beginning of this year. The program began in 1961 by Presidential order; it is now conducted under the Migration and Refugee Assistance Act of 1962.

Programs for children include special instruction in conversational English, conducted by the Dade County, Fla., public schools. Programs for adults include instruction in English, vocational training, professional improvement courses, and loans to college students.

Dade County has a program of English instruction and vocational training for 18,000 adults. The University of Miami is helping 150 lawyers and 300 physicians to improve their professional qualifications, and is training 30 teachers to teach in U.S. schools.

The Office of Education administers a loan program for about 1,600 Cuban students enrolled in 155 colleges and universities in the United States. These students will probably borrow about $1.2 million this fiscal year. Last fiscal year about 1,390 students borrowed $955,722 in Federal funds. Loans bear no interest.

Demonstration Center Opens

A NEW DEMONSTRATION CENTER which provides facilities for demonstrating the latest uses of audiovisual and related media in education was officially opened February 5 and 6 in the headquarters building of the U.S. Office of Education.

Selected for the opening demonstration was an audiovisual report on a 2-year study, *The Impact of Present and Predicted Developments in Communications Technology on Education*, by James D. Finn and Donald P. Ely. This study was made possible by an Office of Education contract under title VII of the National Defense Education Act.

Activities planned for the demonstration center will have the following objectives:

- To display and demonstrate new materials and equipment and show how they can contribute to education.
- To report findings of educational media research.
- To report on noteworthy uses of educational media by educators throughout the Nation.
- To describe new developments in curriculum planning, school organization, and school facilities which relate to uses of educational media.
- To provide services to the staff of the Office of Education which will inform them concerning educational media and assist them in using media effectively in professional presentations.
- To provide facilities for conferences in which many kinds of educational media are used for presentation purposes.

The demonstration center is connected by closed-circuit television lines with all of the major conference rooms and many of the chief offices of the headquarters building, to make possible transmission of recorded televised materials, broadcast television programs, and programs originating within the center to any or all of these locations.

Commissioner Keppel has appointed an Advisory Committee widely representative of the other divisions of the Office to assist the staff of the center in securing maximum participation of other Office units in developing demonstrations and in determining policies for the operation of the center. E. Glenn Featherson, Deputy Associate Commissioner, Bureau of Educational Research and Development, has been named chairman of this committee.

The new center is being administered by the Educational Media Branch, Bureau of Educational Research and Development, Ralph C. M. Flynt, Associate Commissioner.

Project Social Studies

A SPECIAL PROGRAM known as Project Social Studies has recently been initiated by the Office of Education in response to increasing concern over the instruction of American youth in the principles of a free society. Having an extensive scope, it aims at improving research, curriculum materials, instruction, teacher education, and information dissemination relating to all levels of education in the social sciences.

Project Social Studies encompasses three types of activities supported by the Cooperative Research Branch:

Basic and applied research projects, which focus on the improvement of instruction at all levels; these projects include such studies as an exploration of student attitudes toward other cultures or the development of children's concepts of citizenship and government.

Curriculum study centers, which promote more comprehensive and thorough analysis of curricular prob-

lems by redefining the nature and aims of the social studies and the curriculums embodying them; developing instructional methods and materials to achieve these specific aims; experimenting with, evaluating, and revising newly developed instructional methods and materials; and disseminating information about promising methods and materials to interested individuals and groups.

Research development activities, which synthesize research which has been done in particular areas of the social studies.

Funds have been made available for the establishment of social studies curriculum centers in the fiscal year ending June 30. Proposed centers must meet the following prerequisites:

1. Curricular problems to be studied should apply to a number of grade levels

2. Materials and methods to be developed should be within the financial reach of schools or colleges

3. Materials and methods developed should be readily usable by teachers in regular classrooms

4. Materials and methods should be of potential value to different types of schools and colleges in various geographic areas.

Of the 34 proposals for curriculum study centers reviewed at a special meeting in Chicago in February, three have been recommended for support:

No.	*Title*	*Initiator*
HS-041	Development of a Sequential and Cumulative Curriculum in the Social Studies for Able Students in Grades 9–12.	Edwin Fenton Carnegie Institute of Technology Pittsburgh, Pa.
HS-045	Preparation and Evaluation of Curriculum Guides and Sample Pupil Materials for Social Studies in Grades K–14.	Edith West, *et al.* University of Minnesota Minneapolis, Minn.
HS-058	The Development, Trial, and Evaluation of a Jurisprudential and Social Science Curriculum for Grades Eight, Nine, and Ten Focusing on the Analysis of Controversial Public Issues.	Donald W. Oliver Harvard University Cambridge, Mass.

Additional information about Project Social Studies and instructions for submitting proposals may be obtained by writing to the Special Projects Area, Cooperative Research Branch, U.S. Office of Education, Washington 25, D.C.

Cooperative Research

COMMISSIONER KEPPEL has approved 39 basic and applied research projects recommended in November by the Research Advisory Council of the Cooperative Research Program.

The contracts listed below had been processed by February 1963:

Project No.	*Title and duration*	*Project director*
1910	"Effects of Generalizing in Learning" (2/63–1/66).	Ina McD. Bilodeau Tulane University New Orleans, La.
1919	"Antecedents and Consequences of Intuitive Thinking" (1/63–12/67).	Malcolm R. Westcott Dept. of Psychology Vassar College Poughkeepsie, N.Y.
1921	"A Comparison of Programed and Standard Textbooks in Programed Instruction" (1/63–12/63).	Leslie F. Malpass Univ. of So. Florida Tampa, Fla.
1928	"Education, Social Class, and Inter-Group Attitudes" (12/62–8/63).	Melvin M. Tumin Dept. of Sociology & Anthropology Princeton University Princeton, N.J.
1929	"Motivation of School Children" (1/63–12/63).	Wallace A. Kennedy Dept. of Psychology Florida State Univ. Tallahassee, Fla.
1931	"Non-Intellective Factors in Cognitive Efficiency" (1/63–6/65).	Sidney J. Blatt and Joel Allison Yale University New Haven, Conn.
1935	"Social Class Background of 8th Grade Pupils, Social Class Composition of Their School, Their Academic Aspirations and School Adjustment (1/63–6/64).	Paul Wallin Dept. of Sociology Stanford Univ. Stanford, Calif.
1969	"Understanding of BSCS Biology Students as Determined by Instructional Tests" (1/63–12/64).	James Robinson Consultant, Secondary Education, Los Angeles County Schools Los Angeles, Calif.
1972	"A Comparison of Three Methods of Teaching Elementary School Science Involving Programmed Learning" (1/63–6/64).	W. D. Hedges and Mary Ann MacDougal Univ. of Virginia Charlottsville, Va.
1976	"Measurement of Social Intelligence" (1/63–12/65).	J. P. Guilford Univ. of So. Calif. Los Angeles, Calif.
1979	"Resistive Exercises in the Development of Muscular Strength and Endurance" (1/63–8/63).	Lynn McCraw Dept. of Physical and Health Education Univ. of Texas Austin, Tex.
1980	"Prediction of School Adjustment" (1/63-8/63).	Nadine Lambert Calif. State Dept. of Education Sacramento, Calif.

Project No.	*Title and duration*	*Project director*
1987	"High School Grammar-Composition: Demonstrating a Correlation of the Traditional and the Structural Methods of Language Analysis" (1/63–11/64).	Leonard Landry Colorado State College Greeley, Colo.
1991	"Phoneme-Grapheme Relationships Basic to Cues for Improvement in Spelling" (1/63–12/64).	Paul Hanna and Lee L. Jacks Stanford Univ. Stanford, Calif.
1993	"The Effect of Practice and Evaluation on Improvement in Written Composition" (1/63–2/64).	Joseph T. Sutton Stetson Univ. DeLand, Fla.
1994	"A Study of English Programs in Selected High Schools Which Do and Do Not Consistently Educate Outstanding Students in English" (2/63–8/65).	James Squire Univ. of Illinois Urbana, Ill.
1998	"Differences in Grammatical Structures Written at Three Grade Levels, the Structures To Be Analyzed by Transformational Methods" (1/63–6/64).	Kellogg W. Hunt Florida State Univ. Tallahassee, Fla.
1999	"Sources of Educational Climates in High Schools" (2/63–1/66).	James S. Coleman and Edward McDill Johns Hopkins Univ. Baltimore, Md.

Additional information about a particular study may be obtained from the project director.

These projects are examples of the research which the Cooperative Research Program supports as a means of developing more basic and scientific knowledge of the educational process.

Research proposals may be submitted to the Cooperative Research Branch, U.S. Office of Education, Washington 25, D.C., at any time by colleges, universities, and State education agencies. Proposals are reviewed, however, only twice a year, shortly after cut-off dates of February 1 and September 1 for the receipt of proposals. A two-step review is made after incoming applications have been assigned to one of four groups: (1) *Personnel and Processes*—for studies focusing upon the learner and his learning processes; (2) *curriculum and methods*—for research relating to educational content and instructional methodology; (3)*environment*—for proposals concerned with environmental influences on the learning process; (4) *special projects*—for studies in coordinated problem areas requiring sustained research effort. "Project English" and the newly initiated "Project Social Studies" are examples of specific research programs being undertaken.

Once assigned to the appropriate group, proposals are evaluated technically by panels of five specialists drawn from outside the Office of Education. Each of the four groups has a panel which reviews proposals in accordance with the following criteria: Significance of the problem to education, adequacy of the research design, personnel and facilities available at the institution conducting the research, and economic efficiency of the proposed project or the relationship of its cost to the probable results. The panels recommend placement of a proposal in one of five categories: approved, provisionally approved, deferred, disapproved with advice to resubmit, and disapproved.

The next step consists of a further review by the Research Advisory Council, which is composed of two members from each panel plus a chairman. Having been provided with the technical evaluation of the proposals, the Council considers them in relation to the overall research needs and objectives of the program, and accordingly, makes recommendations for support to the Commissioner.

Panel meetings in March and October are followed by Council meetings in April and November, and notification of the status of a proposal is made within 2 weeks after the Council meetings.

Instructions on the specific format to be followed in submitting proposals should be obtained from the Cooperative Research Branch.

While the bulk of Cooperative Research Program funds are allocated to the basic and applied research previously described, other activities aimed at improving the quality and practice of education are also supported. A few pilot studies are supported in order to determine the feasibility of ambitiously designed, costly project proposals. Increasing amounts of program funds are also being made available for two relatively new activities: (1) field demonstrations and, (2) research development activities.

Field demonstrations utilize findings derived from previous research which will develop or illustrate new educational programs or procedures. The Office believes that a test of research findings in the classroom will determine whether they are practical and effective.

Research development activities are planned within the Cooperative Research Branch. Generally, they fall into three categories:

(1) Individual projects for the purpose of ordering and synthesizing previous research.

(2) Research conferences which bring together, for a short time, persons studying similar problems so that they can pool ideas and information on techniques and stimulate new means of meeting common problems.
(3) Research seminars, for periods of from 2 to 4 weeks, which provide researchers with the opportunity to examine a specific area of educational study, consider its research needs, and determine future methods to be followed.

Participation in research development programs is by invitation only. The Cooperative Research Branch staff, however, welcomes communication from individuals and groups having ideas for such activities.

Other Program Notes

Atomic Energy Commission

IN ITS FIRST series of grants for fiscal year 1963, the Atomic Energy Commission approved 98 educational assistance grants totaling $838,549 to 94 colleges and universities.

The grants will provide for purchase of laboratory equipment and fabrication of neutron sources for instruction in the nuclear aspects of the engineering, life, and physical sciences.

The 98 grants bring to $23.6 million the total assistance provided to 569 educational institutions for laboratory equipment to be used in nuclear education since the program was initiated in 1956.

THE AEC awarded 39 life science research contracts, with a total value of $1,827,123 during October 1962. Of the 39 contracts, 3 are new and 36 are renewals.

The contracts, signed with universities, colleges, and private institutions, are part of AEC's continuing policy of assisting and fostering research and development in fields related to atomic energy.

Food and Drug Agencies and Programs: Nationwide Study

THE U.S. Food and Drug Administration is inviting educational or nonprofit organizations to submit proposals for a nationwide study of State and local food and drug agencies and programs. Arrangements will be made through Federal contracting procedures to obtain the services of a qualified organization to make the survey. The organization selected must be familiar with the operations of Government at Federal, State, and local levels. The study will start early in 1963 and should be completed about 18 months after it is initiated. Interested persons should communicate with the Assistant Commissioner for Administration, Food and Drug Administration, Department of Health, Education, and Welfare, Washington 25, D.C.

National Institutes of Health

Training and Fellowship Study

STUDY TEAMS from the National Institutes of Health are visiting 28 universities to discover on-the-spot information on disparities between public and private stipend programs upon which to base a review of NIH stipend support of fellowships and traineeships in the institutions.

The teams are giving particular attention to variations in NIH training grant stipends and reasons for them; relationships between fellowships and training grants; effects of other types of support on the amount of training stipends; feasibility and consequences of having NIH or the university, school, or department establish trainee stipend amounts by academic level and other factors.

The team is also seeking the comments and observations of deans, department chairmen, program coordinators, advisers, and students in approximately 200 departments in 100 academic and professional schools at the universities. Results of the study, expected to be available in April 1963, will be considered during formulation of the following year's (fiscal year 1964) budget.

Health research construction grants

GRANTS totaling $21,792,940 have been awarded to 54 institutions in 28 States for the construction of health research facilities.

The health research construction program, administered by the NIH Division of Research Facilities and Resources, awards matching funds to medical and dental schools, schools of public health, nonprofit hospitals and other research institutions to build and equip research facilities. Recommendations for

grants are made by the National Advisory Council on Health Research Facilities and must be approved by the Surgeon General of the Public Health Service.

The present grants bring to 1,039 awards totaling $229,479,795 during the 6 years the program has been in operation.

Grants and fellowships

DURING the first 6 months of fiscal year 1963 the Public Health Service awarded 8,433 research grants and 2,479 fellowships totaling $221,493,638. The total includes new grants, fellowships, and research career awards in addition to continuation of previously approved awards.

National Science Foundation

Survey on science and engineering: Manpower resources

MORE THAN four-fifths, or 145,000, of all scientists and engineers employed by colleges and universities in 1961 were at 306 graduate level institutions, according to a survey conducted by the National Science Foundation. The remaining 30,000 were employed by more than 1,700 undergraduate level institutions, including junior colleges.

Within the 306 graduate level institutions (those granting graduate degrees in some phase of the natural or social sciences or engineering), the scientists and engineers devoted 43 percent of their total time to research and development, 48 percent to teaching activities, and the remaining 9 percent to other functions.

Of the 306 graduate level institutions, 100 colleges and universities accounted for more than 90 percent of the time devoted to research and development in all institutions of higher education.

These and other findings are included in the survey "Science and Engineering Professional Manpower Resources in Colleges and Universities, 1961" reported in *Reviews of Data on Research and Development*, No. 38. Copies of the publication may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., for 15 cents.

Conferences for college teachers

THE National Science Foundation has made grants totaling $406,000 to 23 colleges and universities (Colorado State University received two grants) in support of 24 conferences for college teachers of science, mathematics, and engineering.

The conferences, lasting less than 4 weeks compared with the summer institutes of 4 to 12 weeks, enable those who teach during summer terms to familiarize themselves with recent advances in their fields. They include study in biology, chemistry, computer science and programing, geology, mathematics, and physics.

The 24 conferences scheduled for 1963 will provide financial assistance for about 700 college teachers.

Summer institutes

GRANTS to colleges and universities in support of summer institutes for both elementary school teachers and supervisors and secondary school teachers have been made by the National Science Foundation.

Nearly $24.2 million will go in support of 415 summer institutes for 21,000 high school science and mathematics teachers. The 287 colleges and universities conducting the institutes include institutions from all 50 States as well as Puerto Rico, the District of Columbia, and Samoa.

Teachers, supervisors, and principals concerned with instruction in science and mathematics in elementary schools will attend 33 summer institutes supported by NSF grants totaling $1,058,800. The institutes will be offered in 27 States and Puerto Rico.

Grants to improve high school science

GRANTS totaling $744,130 have been made to 44 educational and research institutions as part of the National Science Foundation's Cooperative College-School Science Program aimed at increasing the educational potential of science and mathematics departments in the Nation's high schools. The grants will provide training for 2,389 high school students and 689 teachers.

The CCSS program combines the facilities of the sponsoring college, university, or research institution with those of the secondary school within its general locality.

Summer-training programs for superior students

ABOUT 6,500 superior high school students will get special training in science and mathematics this summer through 167 grants made to educational and research institutions located in 41 States, the District of Columbia, and Puerto Rico. The grants, totaling $2,120,250, were made by NSF in its summer science training program for secondary school students.

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From the Office of Education

Cooperative Research Projects: Fiscal 1961. 1962. 92 p. 45 cents. (OE–12004–61)

Digest of Annual Reports of State Boards for Vocational Education to the Office of Education. Fiscal Year Ended June 30, 1961. Summary of Statistical and Financial Information. 1963. 68 p. 45 cents. (OE–80008–61)

Education for a Changing World of Work. Summary Report of the Panel of Consultants on Vocational Education requested by the President of the United States. 1962. 25 p. Free. (OE–80020)

Educational Directory, 1962–63, Part 1: State Governments, by Louise Ratliff Murphy. 1962. 79 p. 30 cents. (OE–20004–63)

Library Statistics of Colleges and Universities, 1959–60. Part 2: Analytic Report, by Barbara Denison and Doris C. Holloday. 1962. 45 p. 40 cents. (OE–15031–60)

Mechanical Technology, Design and Production: A Suggested 2-Year Post High School Curriculum. 1962. 103 p. 70 cents. (Technical Educational Program Series, No. 3, OE–80019)

NDEA and Higher Education. (Report on activities of the four higher education programs of the National Defense Education Act.) December 1962. 8 p. Free. (OE–50024–5)

National Defense Counseling and Guidance Training Institutes: Summer 1963, Academic Year 1963–64. 1963. 15 p. Free. (OE–25015–64)

National Defense Graduate Fellowships: Graduate Programs, 1963–64. 1963. 28 p. Free. (OE–55017–64)

National Defense Language Institutes: Summer 1963, Academic Year 1963–64. 1963. 15 p. Free. (OE–27011–64)

Sabbatical Leave in American Higher Education: Origin, Early History, and Current Practices, by Walter Crosby Eells and Ernest V. Hollis. 1962. 77 p. 30 cents. (OE–53016)

Statistics of Higher Education 1957–58: Faculty, Students, and Degrees, by Edith M. Huddleston, Henry G. Badger, and Bronson Price. 1962. 165 p. $1.25. (OE–53017–58)

Statistics of Land-Grant Colleges and Universities: Year Ended June 30, 1960, by George Lind. 1962. 112 p. 70 cents. (OE–50002–60)

Summary Report on Survey of Students Enrolled for Advanced Degrees: Fall 1961, by Wayne E. Tolliver. December 1962. 7 p. Free. (OE–54009–61)

From Other Government Agencies

American Science Manpower 1960. A Report of the National Register of Scientific and Technical Personnel. 1962. 105 p. 65 cents. (National Science Foundation, NSF 62–43)

Educational Programs and Facilities in Nuclear Science and Engineering. September 1962. 119 p. Free. (University Relations Division, Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tenn.)

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